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MINUTES

Fire Prevention Fire Protection (FPFP) Technical Advisory Committee

The Fire Prevention and Fire Protection Advisory Committee (FPFP) for the Board of Building Regulations and Standards held a meeting on August 30, 2016, at 9:00 a.m., at 50 Maple Street Milford, MA 01757.

Call to Order: The chair called the meeting to order @ 9:11 am

1. Roll Call

Robert Carasitti Chair (RC)	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	
Dave LeBlanc V-Chair (DL)	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	
Walter Adams (WA)	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	Arrived @ 9:22 am
Don Contois (DC)	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	
Harold Cutler (HL)	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	
Felix Zemel (or designee)	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	Designee: Jeff Putnam
Chief Gary McCarraher (GM)	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	Arrived @ 9:48 am
Boston Fire Commissioner	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	Designee: Paul Donga Arrived @ 9:16 am
State Fire Marshal (or designee)	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	Designee: Jen Hoyt
Kurt Ruchala (KR)	<input type="checkbox"/> present <input checked="" type="checkbox"/> absent	
Louise Vera (LV)	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	

- A quorum of 7 was achieved at 9:11 am
- The quorum increased to 8 at 9:16 am
- The quorum increased to 9 at 9:22 am
- The quorum increased to 10 at 9:48 am and remained at 10 until the end of the meeting.

2. Review of minutes from 8/10/16 meeting.

The chair noted a numbering edit for the various comments. The chair also noted that the discussion on Item 2.b. needed to be revised to reflect the new information regarding an exception already existing to R313.1.1 Item 2. The recommendation was to edit the minutes to reflect the original 8/10 discussion and direction to create an exception but then to also include an update from the 8/30 meeting that revised that direction to the creation of an FAQ since the exception already exists (See 8/10/16 minutes).

A motion was made (Dave LeBlanc) and seconded (Paul Donga) to accept the minutes as modified.

Motion was approved

Vote: 6-0-2

Hal Cutler and Don Contois abstained since they were not present at the previous meeting.

3. Review of staff/public comment to proposed 9th Edition Sections:

- a. (formerly 8/10/16 2.d) - J Coture – Common area detection for 3 Families not protected with sprinklers.
 - i. Language was supposed to be added (similar to **R314.9 Common areas** to address these 3 families) for 3 families.

***R314.9 Common Areas** All common areas including basements and hallways/stairways in two family dwellings shall have smoke detector protection. Each detection device shall activate an alarm that provides audible notification installed in accordance with NFPA 72-2013: 18.4.5.*

A similar provision needs to be added for 3 families that are not sprinkler protected.

It has been suggested that the provisions return to language found in the 6th Edition 918.4.7 Exception 3:

918.4.7 Use Group R-2: An automatic fire detection system shall be installed and maintained throughout all occupancies in use group R-2 and in accordance with table 918.

Exceptions:

- 1. An automatic fire detection system is not required in buildings that do not have interior corridors serving guestrooms or dwelling units and where all guestrooms or dwelling units have a means of egress door opening directly to an exterior exit access which leads directly to the exits.*
- 2. System smoke detectors are not required in guestrooms or dwelling units.*
- 3. A system heat detector shall be required within each guest room or dwelling unit located not more than six feet from each door way that leads to an interior corridor or exit. System heat detectors shall not be required where the guestroom or dwelling unit is equipped with residential sprinklers that, when activated, will activate the fire protective signaling system.*

- ii. Also, FAQ's are needed for both R314.9 and the new provision in the commercial code for 3 families so the public and enforcement officials know what an acceptable/compliant design is supposed to consist of in terms of devices and their locations.

Committee Effort

The committee discussed the comment at length and in particular the intent of a common area system. Points of note from the discussion:

1. New construction 3 dwelling unit buildings are not required to have common area smoke detection because the buildings are required to be sprinkler protected. This is consistent with model code.
2. Likewise, existing buildings converted to 3 dwelling unit buildings are subject to Change in Use provisions which require the buildings to be sprinkler protected.
3. Existing 3 dwelling unit buildings which are already or will be sprinkler protected will likewise not require smoke detection in the common areas.
4. Until the 9th Edition is promulgated, existing 3 dwelling unit buildings which are not sprinkler protected and already have a 6th Edition common area detection system must maintain those systems unless sprinklers are provided throughout.
 - a. As sprinklers were required for new construction under the 6th, 7th and 8th Editions (and will be under the 9th), the 6th Edition common area system was only required for 3 dwelling unit buildings existing prior to the 6th Edition and which were not substantially altered under the 6th Edition.
5. With the promulgation of the 9th, existing 3 dwelling unit buildings covered by the commercial code, will be required to have common area detection unless sprinklers are provided throughout (voluntarily or otherwise required).
 - a. Sprinklers are not required under a Prescriptive Method but numerous other systems including Emergency Responder Radio Coverage are required. It seems less likely that the Prescriptive Method would be selected over the *Work Area Method for this reason*.
 - b. Sprinklers may not be required under Work Area Method Alteration Level 2 because MA amends IEBC 804.2 by adding an exception for R-2 uses undergoing Level 2 alterations.

804.2 Add exception as follows:

Exception. *R-2 structures, of three units undergoing Level 2 alterations, are exempt from the requirements of this section provided that:*

1. *The work area is for a single unit; and*
 2. *No other permits for Level 2 work have been issued for the building in the previous two years.*
- c. Sprinklers are required throughout the work area under an Alteration Level 3 or where the Exception to 804.2 cannot be used in an Alteration Level 2.
6. Townhomes that are 3 stories or less in height are addressed by the residential code unless the owner voluntarily chooses to use the commercial code. Even in the latter case, it is unlikely that common areas will exist with side by side designs. However, if common areas do exist in the latter case, common area detection will be required.

7. In consideration of the above, this issue is most likely limited to 3 dwelling unit buildings existing prior to the 6th Edition, where the units are “stacked” (less likely for side by side townhomes), and sprinklers are not otherwise required based on the proposed project.
8. The current draft 9th addresses common area smoke detection for existing R-2 uses in the general provisions of Chapter 34. Section 302.10 requires common area detection in unsprinklered R-2 uses (which include 3 dwelling unit buildings) regardless of the Method selected from the modified IEBC.

These provisions require the common area detection ONLY when there is a building fire alarm system otherwise required or provided. If no building fire alarms system is required or provided, then only dwelling unit protection is required.

The exception to 302.10.3 appears to be an attempt to provide a 6th Edition style common area detection system.

302.10 Fire detection systems in R-2 Uses which are not currently equipped with sprinklers.
When this code requires a smoke detection system in an R-2 Use and does not additionally require an NFPA 13, 13R, or 13D system installed throughout the building then subsections 302.10.1 through 302.10.3 shall apply.

302.10.1 Heat detection. *If a building fire alarm system is provided, a heat detector shall be provided inside each dwelling unit within 6 feet of the entrance door. The heat detectors shall be connected to the building fire alarm system and cause a general alarm throughout the building upon activation. This shall also apply to the R-2 Use of a mixed use building.*

302.10.2 Common area detection. *If a building fire alarm system is provided, smoke detectors shall be provided in the common areas of the building. The common area detectors shall be connected to the building fire alarm system and cause a general alarm throughout the building upon activation. This shall also apply to the R-2 Use of a mixed use building.*

302.10.3 Dwelling unit detection. *Interconnected dwelling unit smoke detection shall sound within that dwelling unit only.*

Exception: *For buildings of three stories or less used exclusively as R-2 Use with 6 or fewer dwelling units and with at least two means of egress serving each dwelling unit, the fire detection system may comply with the all of the following requirements:*

- 1. Interconnected dwelling unit smoke detection shall sound within that dwelling unit only.*
- 2. Area smoke detection shall be provided throughout common uses spaces including shared means of egress.*
- 3. A heat detector shall be provided inside each dwelling unit within 6 feet of doors serving common areas.*

Upon activation of either the common area smoke detection or the heat detection, a general alarm shall be sounded throughout the building.

Upon review of these provisions, the following is noted:

- 1) As an “exception” it is not required to be applied (i.e. exceptions are voluntarily applied)...
- 2) With the inclusion of the term “may” the exception is furthered as an option (i.e. voluntary)...
- 3) If “may” is substituted with “must” and it was changed from an exception to its own provision, the final paragraph requires a building fire alarm system in order to accomplish the alarm “throughout”.

In summary, the proposed language in 302.10.3 does not require a 6th Edition system or a system comparable to R314.9 (applicable to 2 family buildings with common areas) unless a building fire alarm system is otherwise provided or required. The language would need to be revised to achieve a 6th Edition system or a 9th Edition System similar to R314.9.

R314.9 Common areas. *All common areas including basements and hallways/stairways in two family dwellings shall have smoke detector protection. Each detection device shall activate an alarm that provides audible notification installed in accordance with NFPA 72-2013: 18.4.5.*

9. Before revising proposed language for either R314.9 or 302.10, the committee addressed the “intent” and the objective of providing common area detection system.
 - a. The common areas are typical common stairs and possibly basements. The committee concurred that the intent of the system is to provide warning to the occupants of an event compromising the egress or potentially compromising the egress.
 - b. It is recognized that occupants of R-2 uses are most vulnerable while sleeping as supported by the fire history in residential buildings.
 - c. To effect warning to the occupants, such a system should provide appropriate audibility in the sleeping rooms consistent with NFPA 72 criteria.
 - d. This was the motivation behind the original FPFP recommendation on this issue and is why the R314.9 as currently in the Draft 9th.
 - e. It is the opinion of the committee that the 6th Edition approach, while a reasonable 1st attempt to provide some warning to occupants, is not satisfactory to achieve the objective of waking occupants who may be asleep.
 - f. At this point the Chair polled the committee on which approach was preferred: a 6th Edition approach or a new to the 9th Edition approach to use NFPA 72 criteria for audibility at the pillow. The poll was 9 in favor of the 9th and 1 in favor of the 6th.
 - g. The committee then reviewed the characteristics of each approach.

6 th Approach – Building system for common areas	9 th Approach – Extends unit smoke alarms to common areas
<p>Higher Cost</p> <p>Requires a building fire alarm system with supervision</p> <ul style="list-style-type: none"> - Higher initial costs - Ongoing subscription costs <p>Number of devices</p> <ul style="list-style-type: none"> - 7 to 12 additional detectors 	<p>Lower Cost</p> <p>Does not require a building fire alarm system or supervision</p> <ul style="list-style-type: none"> - Lower initial costs - No ongoing subscription costs <p>Number of devices</p> <ul style="list-style-type: none"> - 4 to 9 additional devices
<p>Lower Audibility</p> <ul style="list-style-type: none"> - Uses a sounder base 6 feet inside front door - Low audibility if any in sleeping rooms 	<p>Better Audibility</p> <ul style="list-style-type: none"> - Uses smoke alarm sounder bases already in and outside the bedrooms
<p>Lower nuisance alarms</p> <ul style="list-style-type: none"> - Accidental alarm in dwelling unit will only result in alarm activation in the unit. - Accidental alarm in common area will activate an alarm in each unit. 	<p>Potential nuisance alarms</p> <ul style="list-style-type: none"> - Accidental alarm in unit will also result in alarm activation in common areas on the level of the unit. - Accidental alarm in the common area will impact one to three units depending on the nuisance
Automatic Fire Department Notification dues to supervision	Fire Department Notification is not automatic
If a common area device is disable, the monitoring by the building fire alarm system will identify a trouble condition.	No monitoring so a resident can physically disable a detector.

- h. The committee also discussed the level of difficulty with installing each type of system.
 - i. The challenges in condominium buildings versus rentals are different.
 1. Condominiums could require additional consensus relative to maintaining the 6th approach system and maintenance costs. Whereas the 9th approach is incumbent on the owner of the unit.
 2. Apartments for rent, the owner of the building is responsible for installation and maintenance costs in all cases.
 - ii. The installation of the 6th approach system requires wiring throughout the common areas and within each unit.
 - iii. The installation of the 9th approach system requires extension of 1 wire into the common enclosed stairways at the level of the unit. If there is a common basement, two options could be afforded:

1. Option 1 – Treat the basement as an additional unit by separating it from the common exits and providing smoke alarm protection for the basement (including a detector into the common enclosed stairways).
2. Option 2 – Run a wire from each unit to the basement and provide a smoke detector for each unit.

- i. At this point of the discussion, a motion was made (Paul Donga) and seconded (Walter Adams) to see where the committee now stood on their preference relative to the approaches. A yea vote would be for the 9th approach and a nay vote would be for the 6th Approach.

Motion was approved Vote: 10-0-0

10. With consensus that a 9th approach should be provided to meet the objective of warning sleeping occupants, a motion was made (Jen Hoyt) and seconded (Don Contois) to have the chair draft language consistent with the 9th approach as discussed.

Motion was approved Vote: 10-0-0

2. A motion was made to adjourn the meeting (Jen Hoyt) and seconded (Dave LeBlanc).

Motion was approved Vote: 10-0-0

Meeting was adjourned at 12:00 pm.

Post Script – Chair Draft Language to Effect 9th Approach

~~R314.9 Common areas. All common areas including basements and hallways/stairways in two family dwellings shall have smoke detector protection. Each detection device shall activate an alarm that provides audible notification installed in accordance with NFPA 72-2013: 18.4.5.~~

Common areas in unsprinklered one and two family dwellings shall be protected as follows:

1. An additional smoke alarm from the unit shall be provide in each common enclosed stairway within 6 feet of the respective unit's door.
2. If a common basement exists, the owner(s) shall provide one of the following:
 - a. Option 1 – The basement shall be separated from the dwelling units and the common stairways with 1 hour fire rated assemblies and the basement will be provide with a smoke alarm system with an additional device located in the common interior stairways within 6 feet of the basement doors.
 - b. Option 2 – An additional detector from each unit's independent smoke alarm system shall be provide in the basement within 6 feet of the basement side of one common enclosed stairway door to the basement.

302.10 Fire detection systems in R-2 Uses which are not currently equipped with sprinklers. When this code requires a smoke detection system in an R-2 Use and does not additionally require an NFPA 13, 13R, or 13D system installed throughout the building then subsections 302.10.1 through 302.10.3~~2~~ shall apply.

302.10.1 R-2 Uses containing more than 3 dwelling units or which are more than 3 stories in height.

302.10.1.1 Heat detection. If a building fire alarm system is provided, a heat detector shall be provided inside each dwelling unit within 6 feet of the entrance door. The heat detectors shall be connected to the building fire alarm system and cause a general alarm throughout the building upon activation. This shall also apply to the R-2 Use of a mixed use building.

302.10.1.2 Common area detection. If a building fire alarm system is provided, smoke detectors shall be provided in the common areas of the building. The common area detectors shall be connected to the building fire alarm system and cause a general alarm throughout the building upon activation. This shall also apply to the R-2 Use of a mixed use building.

302.10.1.3 Dwelling unit detection. Interconnected dwelling unit smoke detection shall sound within that dwelling unit only.

~~**Exception:** For buildings of three stories or less used exclusively as R-2 Use with 6 or fewer dwelling units and with at least two means of egress serving each dwelling unit, the fire detection system may comply with the all of the following requirements:~~

- ~~1. Interconnected dwelling unit smoke detection shall sound within that dwelling unit only.~~
- ~~2. Area smoke detection shall be provided throughout common uses spaces including shared means of egress.~~
- ~~3. A heat detector shall be provided inside each dwelling unit within 6 feet of doors serving common areas.~~

~~Upon activation of either the common area smoke detection or the heat detection, a general alarm shall be sounded throughout the building.~~

302.10.2 R-2 Uses containing no more than 3 dwelling units and which are 3 stories or less in height.

Common areas in unsprinklered buildings shall be protected as follows:

1. An additional smoke alarm from the unit shall be provide in each common enclosed stairway within 6 feet of the respective unit's door.
2. If a common basement exists, the owner(s) shall provide one of the following:
 - a. Option 1 – The basement shall be separated from the dwelling units and the common stairways with 1 hour fire rated assemblies and the basement will be provide with a smoke alarm system with an additional device located in the common interior stairways within 6 feet of the basement doors.
 - b. Option 2 – An additional detector from each unit's independent smoke alarm system shall be provide in the basement within 6 feet of the basement side of one common enclosed stairway door to the basement.